Claims 1-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over the prior art as described at pages 1-5 and illustrated in figs. 11-12 in view of Gloor et al. or Ishikawa et al. (all of record). This rejection is respectfully traversed in light of the following remarks.

The Present Invention

The present invention prevents a reflecting sheet from being seen by causing light to uniformly enter an exiting surface of a light control element, or prism sheet, from inside the light control element. As described at page 10, line 7 to page 11, line 7, in reference to FIG. 3 of the present application, this uniform illumination of an exiting surface, or light emitting side of a light control element 12, is accomplished by allowing a main component of light to enter from light-source-side slopes M1 of projections of the light control element 12, and reflecting this entering light at exiting-surface slopes M2 to emit the illumination light from the exiting-surface slopes M2. As a result, the main emitting direction of illumination light frontward relative to the exiting surface is corrected within the light control element.

In addition, the exiting-surface slopes M2 are roughened to serve as light-diffusible surfaces. As a result, illumination light L1 reflected by the exiting-surface slopes M2 is diffused and emitted from the exiting surface of the light control element 12 over a widened angular range, relative to the degree of roughness of the exiting-surface slopes M2. Roughening the exiting-surface slopes M2 also expands an exiting-surface-side region AR of the light control element 12 that is illuminated by illumination light L1 reflected by a single exiting surface slope M2. As a result, the exiting surface of the light control element 12 is

more uniformly illuminated from inside, thereby eliminating the relatively less illuminated region DR of the conventional arrangement.

The Prior Art

The prior art, disclosed at pages 1-5 and illustrated in FIGS. 11 and 12 of the present application, teaches a surface light source that includes a reflecting sheet, a scattering light guide plate, a prism sheet, and a light diffusible sheet, placed one over another into a laminate form.

As illustrated in FIG. 14 of the present application, the main component of light from a conventional light control element that is seen through a liquid crystal display is a component reflected by exiting surface slopes M2 of a prism sheet 5, corresponding to region AR. At the same time, a relatively smaller portion of the light seen is light reflected from light sources side slopes M1 of the prism sheet 5, corresponding to region DR. As a result, regions AR from the prism sheet 5 are intensely illuminated and regions DR are relatively faintly illuminated, which causes the color of the reflecting sheet 4 to be seen in regions DR, corrupting the display quality. Therefore, a light diffusible sheet 6 is needed outside the prior art light control element in order to diffuse the emitting light of the prism sheet 5.

Therefore, the prior art, disclosed at pages 1-5 and illustrated in FIGS. 11 and 12 of the present application, does not teach a light control element that includes a light entrance side having repeated projections with slopes, where at least part of the slopes define a light diffusible surface to generate diffused light passing through a light control element, toward a

light emitting side, to reduce light effects of a reflecting sheet, as set forth in the present invention.

Gloor et al.

Gloor et al. teach an electro-optical display for redirecting incident light into the eye of an observer. More specifically, as described at column 3, lines 4-45 of Gloor et al., Gloor et al. teach a plane reflector with reflecting surface strips that prevents incident light coming from above or from the side from being reflected downward. The reflecting surface strips, which are triangular in shape, reflect light into the eye of an observer.

While Gloor et al. teach a diffusing side of a light control structure that faces a light source located above, or at a side portion of an observer of a display, the diffusing side taught by Gloor et al., as illustrated in FIG. 2 of Gloor et al., is concerned with diffusing light that is reflected from a surface that receives the light, as opposed to diffusing light passing through the light control structure from a light entrance side to a light emitting side spaced from the light entrance side, as set forth in the present invention.

In addition, since the surface that receives the light from the light source and the surface that emits the light received by the light receiving surface are defined by a single surface, as illustrated in FIG. 2 of Gloor et al., Gloor et al. teach away from a light emitting side spaced from a light entrance side towards a display, as set forth in the present invention. Likewise, since Gloor et al. teach away from a light emitting side spaced from a light entrance side towards a display, Gloor et al. do not teach at least part of slopes of repeated projections

of a light entrance side defining a light diffusible surface to generate diffused light passing through a light control element, toward a light emitting side, to reduce effects of a reflecting sheet, as set forth in the present invention.

Ishikawa et al.

Ishikawa et al. teach a multiplicity of prism-like portions on one surface of a transparent member that are arranged to be coarsened. As illustrated in FIG. 6 of Ishikawa et al., the transparent member 1 is disposed on a light emitting surface side of a surface light source device 3, between the surface light source device 3 and a liquid crystal display panel 4. Course surfaces, which prevent the appearance of stripe Moire patterns, are formed on surfaces of prism-like convex portions 10 positioned on a surface of the transparent member 1 from which light emitted through the transparent member is emitted towards the liquid crystal display panel 4.

Therefore, since Ishikawa et al. teach prism-like convex portions 10 positioned on the light emitting side of the transparent member 1, rather than on a light entrance side, Ishikawa et al. do not teach a light control element including a light entrance side to receive light emitted from a light source, with the light entrance side having a prismatic surface that has repeated projections with slopes.

In addition, since the prism-like convex portion 10 of Ishikawa et al. is located on the light emitting side of the transparent member 1, the light diffusible surface taught by Ishikawa et al. generates diffused light passing from the light emitting side to the liquid crystal display

panel 4. By teaching generating diffused light passing from the light emitting side to the display, rather than generating, at the light entrance side, diffused light passing through a control element, Ishikawa et al. teach away from at least part of slopes of repeated projections on a light entrance side defining a light diffusible surface to generate light passing through a light control element toward a light emitting side, to reduce light effects of a reflecting sheet, as set forth in the present invention.

In addition, claims 1, 4 and 7 have been amended to more clearly set forth a light entrance surface positioned from a light emitting side, to generate diffused light passing through a light control element to reduce light effects of a reflecting sheet. Accordingly, Applicants respectfully assert that the features of claims 1, 4 and 7 are not disclosed or suggested by the prior art as described at pages 1-5 and illustrated in figs. 11-12 in view of Gloor et al. or Ishikawa et al. Claims 2, 3, 5 and 6 are allowable at least due to their dependency on their respective base claims. Accordingly, it is respectfully requested that this rejection be withdrawn.

Conclusion

In light of the amendments and remarks presented above, it is respectfully submitted that the application is in condition for allowance, and such action is hereby solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

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If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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